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PRELIMINARY AMENDMENT

Prior to calculation of the filing fee for the filing of this application, Applicant amends the application by eliminating the multiple dependencies in the claims. In this regard, please delete the claims (pages 46-64 of the specification as filed), and substitute therefor the new claims found in the attachment hereto (also numbered pages 46-64).

A redlined version of all changes made through this preliminary amendment is submitted herewith.

Respectfully submitted,


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What is claimed is:

1. A method for monitoring a browser's interactions with a server arrangement, comprising the steps of:
 - (a) capturing information regarding http requests received at the server arrangement and corresponding http responses sent from the server arrangement, the information including,
 - (i) for each request, content of the request and a time of receipt for the request, and
 - (ii) content of the response corresponding to each such request;
 - (b) identifying sessions, each comprising requests received at the server arrangement and corresponding responses;
 - (c) assigning a session identification (SessionID) for each identified session; and
 - (d) recording in a database for each identified session the SessionID for such session in association with,
 - (i) the content of each respective request in the identified session,
 - (ii) the content of each respective response in the identified session, and
 - (iii) a chronological order of the requests in the identified session.
2. A method for monitoring browser interactions with a server arrangement, comprising the steps of:
 - (a) capturing information regarding http requests received from browsers at the server arrangement and corresponding http responses sent to the browsers from the server arrangement, the information including,
 - (i) for each request,
 - (A) content of the request,
 - (B) a time of receipt for the request, and
 - (C) a browser identification (BrowserID) associated with the request, and
 - (ii) content of the response corresponding to each such request, and
 - (b) identifying sessions for each BrowserID, each session comprising requests associated with such BrowserID that are received at the server arrangement within a predetermined period of time and corresponding responses;
 - (c) assigning a session identification (SessionID) for each identified session; and
 - (d) recording in a database for each identified session the SessionID for such session in association with,
 - (i) the content of each respective request in the identified session,
 - (ii) the content of each respective response in the identified session,

- (iii) a chronological order of the requests in the identified session, and
- (iv) the BrowserID for which the session is identified.

3. A method for monitoring browser interactions with a server arrangement for a website,
comprising the steps of:

- (a) capturing information regarding http requests received from browsers at the server arrangement and corresponding http responses sent to the browsers from the server arrangement, the information including,
 - (i) for each request,
 - (A) content of the request,
 - (B) a time of receipt for the request,
 - (C) a browser identification (BrowserID) associated with the request, and
 - (D) an entity identification (EntityID) associated with a uniform resource locator (URL) related to the request, and
 - (ii) content of the response corresponding to each such request;
- (b) identifying sessions for each pair of BrowserID and EntityID, each session comprising,
 - (i) requests associated with such BrowserID and related to the URL associated with the EntityID that are received at the server arrangement within a predetermined period of time, and
 - (ii) corresponding responses;
- (c) assigning a session identification (SessionID) for each identified session; and
- (d) recording in a database for each identified session the SessionID for such session in association with,
 - (i) the content of each respective request in the identified session,
 - (ii) the content of each respective response in the identified session,
 - (iii) a chronological order of the requests in the identified session, and
 - (iv) the BrowserID and EntityID for which the session is identified.

4. The method of claim 1, wherein said step of recording in the database for each identified session the chronological order of the requests in the identified session comprises recording in the database the time of receipt for each request in the identified session.

5. The method of claim 1, wherein said step of identifying sessions includes identifying,
(a) requests, each of which is received at the server arrangement within a predetermined period of time of another such request, and
(b) responses corresponding to such requests.

6. The method of claim 5, wherein said step of identifying sessions further includes identifying a request as being chronologically the last request of the session if the request is for a resource predetermined to signify an end of a session.

7. The method of claim 1, further comprising the steps of,
(a) obtaining a user identification (UserID) associated with a particular request, and
(b) recording the UserID in the database in association with the SessionID of the particular request.

8. The method of claim 7, wherein the UserID is obtained from an application server.

9. The method of claim 1, further comprising the steps of,
(a) obtaining an application session identification (ApplicationSessionID) associated with a particular request, and
(b) recording the ApplicationSessionID in the database in association with the SessionID of the particular request.

10. The method of claim 9, wherein the ApplicationSessionID is obtained from an application server.

11. The method of claim 1, further comprising, before said step of identifying sessions, first discarding,
(a) responses, each of which has a content type matching a predetermined content type, and
(b) each request corresponding to such response.

12. The method of claim 1, further comprising, for each request for a resource predetermined to have sensitive input fields, first deleting data from such input fields before said step of recording the content of the request.

13. The method of claim 1, wherein the database includes contents of previous responses recorded in association with respective hash values therefor, and further comprising the steps of,

- (a) calculating a hash value for the content of a current response; and
- (b) when the calculated hash value matches none of the recorded hash values, recording the content of the current response in the database and, in association therewith, recording the calculated hash value in the database.

14. The method of claim 13, wherein said step of recording the SessionID for each identified session in association with the content of each respective response in the identified session comprises the step of linking the SessionID with the recorded hash value for the content of each response in such identified session.

15. A computer network for performing the method of claim 1, comprising:

- (a) a server arrangement disposed for communication with a browser whereat said step of capturing is performed; and
- (b) a database whereat said step of recording is performed.

16. The computer network of claim 15, further comprising a firewall in said computer network disposed between said server arrangement and said database.

17. The computer network of claim 15, wherein said server arrangement comprises a single server.

18. The computer network of claim 15, wherein said server arrangement comprises a plurality of servers.

19. The computer network of claim 18, wherein said step of capturing information is performed at each server of said plurality of servers.

20. The computer network of claim 19, wherein said computer network further comprises a collection component.

21. The computer network of claim 20, wherein the method further comprises the steps of, at each server of said plurality of servers,

- (a) calculating a hash value for a response captured at that server;
- (b) when the calculated hash value matches one of the reference hash values, forwarding from that server to said collection component the calculated hash value but not the content of the response; and

- (c) when the calculated hash value matches none of the reference hash values, forwarding from that server to said collection component the calculated hash value for the content of the response and the content of the response.

- 5 22. The computer network of claim 20, wherein said step of identifying sessions is performed at said collection component.
23. The computer network of claim 20, further comprising a firewall disposed between said server arrangement and said collection component.
- 10 24. The method of claim 1, further comprising the steps of,
- (a) identifying each request for which a corresponding response is of a content type representing part of a click stream, and
- (b) recording in the database whether a recorded request is so identified.
- 15 25. The computer network of claim 24, wherein said step of identifying each request for which a corresponding response is of a content type representing part of a click stream is performed at the server arrangement.
- 20 26. The computer network of claim 24, wherein the content type is text/html.
27. The computer network of claim 24, wherein said step of recording in the database whether a response recorded in the database is so identified comprises setting a flag maintained in the database in association with the request.
- 25 28. The method of claim 1, wherein the content of each response is retained within a respective record of the database, and wherein said step of recording further comprises calculating a hash value for each such database record and then encrypting the calculated hash value with a private key of a public-private key pair.
- 30 29. The method of claim 28, wherein the public-private key pair is for an entity.
30. The method of claim 29, wherein the public-private key pair is for a user of a browser to which the record pertains.
- 35 31. The method of claim 1, wherein the content of each request is retained within a respective record of the database, and wherein said step of recording further comprises calculating a hash value for each such database record and then encrypting the calculated hash value with a private key of a public-private key pair.

32. The method of claim 31, wherein the public-private key pair is for an entity.
33. The method of claim 31, wherein the public-private key pair is for a user of a browser to which the record pertains.
34. The method of claim 1, wherein each SessionID is retained within a respective record of the database, and wherein said step of recording further comprises calculating a hash value for each such database record and then encrypting the calculated hash value with a private key of a public-private key pair.
35. The method of claim 34, wherein the public-private key pair is for an entity.
36. The method of claim 34, wherein the public-private key pair is for a user of a browser to which the record pertains.
37. The method of claim 2, wherein each BrowserID is retained within a respective record of the database, and wherein said step of recording further comprises calculating a hash value for each such database record and then encrypting the calculated hash value with a private key of a public-private key pair.
38. The method of claim 37, wherein the public-private key pair is for an entity.
39. The method of claim 37, wherein the public-private key pair is for a user of a browser to which the record pertains.
40. The method of claim 3, wherein each EntityID is retained within a respective record of the database, and wherein said step of recording further comprises calculating a hash value for each such database record and then encrypting the calculated hash value with a private key of a public-private key pair.
41. The method of claim 40, wherein the public-private key pair is for an entity.
42. The method of claim 40, wherein the public-private key pair is for a user of a browser to which the record pertains.
43. A method of creating content of a response enabling a browser to generate a page from information recorded in a database regarding past browser interactions with a server arrangement, the browser interactions comprising primary and subordinate http requests

received at the server arrangement and corresponding primary and subordinate http responses sent from the server arrangement, the information including,

(i) for each request, content of the request and, in association therewith, content of the response corresponding to such request, and

(ii) a chronological order of the requests received at the server arrangement, the method comprising the steps of:

(a) parsing the content of a primary response recorded in the database to identify uniform resource locators (URLs) contained therein, and

(b) for a URL so identified, locating in the content recorded in the database of subordinate requests received at the server arrangement prior to the next primary request a URL matching the identified URL, and upon a match, replacing the identified URL in the content of the primary response with a database pointer directed to the content recorded in the database for the subordinate response corresponding to such subordinate request having the matching URL.

44. A method of creating content of a response enabling a browser to generate a page from information recorded in a database regarding past browser interactions with a server arrangement, the browser interactions comprising primary and subordinate http requests received at the server arrangement from browsers and corresponding primary and subordinate http responses sent from the server arrangement to the browsers, the page representative of past browser interactions of a particular browser, the information recorded in the database including,

(i) for each request, content of the request and, in association therewith, content of the response corresponding to such request and a browser identification (BrowserID) for the request, the BrowserID being unique to a browser,

(ii) a chronological order of the requests received at the server arrangement, the method comprising the steps of:

(a) parsing the content of a primary response recorded in the database to identify uniform resource locators (URLs) contained therein, the primary response being associated with the BrowserID of the particular browser;

(b) for a URL so identified, locating in the content recorded in the database of subordinate requests received at the server arrangement prior to the next primary request a URL matching the identified URL, and upon a match, replacing the identified URL in the content of the primary response with a database pointer directed to the content recorded in the database for the subordinate response corresponding to such subordinate request having the matching URL.

45. The method of claim 44, wherein the database further includes recorded therein, in association with each request, a session identification (SessionID) for a session in which the request was received at the server arrangement, each SessionID being unique to a session.

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46. The method of claim 45, wherein the page further represents past browser interactions of the particular browser in a particular session, and the primary response for which the content is parsed is associated with the SessionID of the particular session.

10 47. The method of claim 44, wherein the database further includes recorded therein, in association with each request, an entity identification (EntityID) on whose behalf the corresponding response is made, each EntityID being unique to an entity.

15 48. The method of claim 47, wherein the page further represents past browser interactions of the particular browser with regard to a particular entity, and the primary response for which the content is parsed is associated with the EntityID of the particular entity.

20 49. The method of claim 44, wherein the database further includes recorded therein, in association with each request, an application session identification (ApplicationSessionID) for an application session, each ApplicationSessionID being unique to an application session.

25 50. The method of claim 49, wherein the page further represents past browser interactions of the particular browser in a particular application session, and the primary response for which the content is parsed is associated with the ApplicationSessionID of the particular application session.

30 51. The method of claim 44, wherein the database further includes recorded therein, in association with each request, a user identification (UserID) for a user of the particular browser, each UserID being unique to a user.

52. The method of claim 51, wherein the page further represents past browser interactions of the particular browser by a particular user, and the primary response for which the content is parsed is associated with the UserID of the particular user.

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53. The method of claim 43, further comprising the step of modifying the content of the parsed primary response to deactivate hypertext that would otherwise be included in the page.

54. The method of claim 43, further comprising the step of identifying a form source URL in the content of the parsed primary response and a matching target source URL in the content of a subsequent request recorded in the database, and associating the response content with the request content.

55. The method of claim 43, further comprising the step of identifying a form source URL in the content of the parsed primary response and a matching target source URL in the content of a subsequent request recorded in the database, and modifying the content of the response to include data from the content of the request such that the page generated by the browser comprises a form-filled page.

56. The method of claim 55, wherein the page comprises a complete form-filled page.

57. The method of claim 43, wherein the parsed primary response includes a content type of text/html.

58. The method of claim 43, wherein the content of each response is retained within a respective record of the database together with a digital signature for such record, and further comprising the step of verifying the record with a public key of a public-private key pair.

59. The method of claim 58, wherein the public-private key pair is for an entity.

60. The method of claim 58, wherein the public-private key pair is for a user of a browser to which the record pertains.

61. The method of claim 43, wherein the content of each request is retained within a respective record of the database together with a digital signature for such record, and further comprising the step of verifying the record with a public key of a public-private key pair.

62. The method of claim 61, wherein the public-private key pair is for an entity.

63. The method of claim 61, wherein the public-private key pair is for a user of a browser to which the record pertains.

64. The method of claim 44, wherein each BrowserID is retained within a respective record of the database together with a digital signature for such record, and further comprising the step of verifying the record with a public key of a public-private key pair.

65. The method of claim 64, wherein the public-private key pair is for an entity.
66. The method of claim 64, wherein the public-private key pair is for a user of a browser to which the record pertains.
67. The method of claim 45, wherein each SessionID is retained within a respective record of the database together with a digital signature for such record, and further comprising the step of verifying the record with a public key of a public-private key pair.
68. The method of claim 67, wherein the public-private key pair is for an entity.
69. The method of claim 67, wherein the public-private key pair is for a user of a browser to which the record pertains.
70. The method of claim 47, wherein each EntityID is retained within a respective record of the database together with a digital signature for such record, and further comprising the step of verifying the record with a public key of a public-private key pair.
71. The method of claim 70, wherein the public-private key pair is for the entity of the EntityID.
72. The method of claim 70, wherein the public-private key pair is for a user of a browser to which the record pertains.
73. The method of claim 49, wherein each ApplicationSessionID is retained within a respective record of the database together with a digital signature for such record, and further comprising the step of verifying the record with a public key of a public-private key pair.
74. The method of claim 73, wherein the public-private key pair is for an entity.
75. The method of claim 73, wherein the public-private key pair is for a user of a browser to which the record pertains.
76. The method of claim 49, wherein each UserID is retained within a respective record of the database together with a digital signature for such record, and further comprising the step of verifying the record with a public key of a public-private key pair.

77. The method of claim 76, wherein the public-private key pair is for an entity.

78. The method of claim 76, wherein the public-private key pair is for the user of the UserID.

5 79. A method of viewing a page representative of past browser interactions of a particular browser with a server arrangement, comprising the steps of:

- (I) monitoring browser interactions of a plurality of browsers, including the particular browser, with the server arrangement, including,
 - (a) capturing information regarding primary and subordinate http requests received from the browsers at the server arrangement and corresponding primary and subordinate http responses sent to the browsers from the server arrangement, the information including,
 - (i) for each request,
 - (A) content of the request,
 - (B) a time of receipt for the request, and
 - (C) a browser identification (BrowserID) associated with the request, the BrowserID being unique to each browser, and
 - (ii) content of the response corresponding to each such request, and
 - (b) identifying sessions for each BrowserID, each session comprising requests associated with such BrowserID that are received at the server arrangement within a predetermined period of time and corresponding responses;
 - (c) assigning a session identification (SessionID) for each identified session; and
 - (d) recording in a database for each identified session the SessionID for such session in association with,
 - (i) the content of each respective request in the identified session,
 - (ii) the content of each respective response in the identified session,
 - (iii) a chronological order of the requests in the identified session, and
 - (iv) the BrowserID for which the session is identified;
- (II) creating content of a response, including,
 - (a) parsing the content of a primary response recorded in the database to identify uniform resource locators (URLs) contained therein, the primary response being associated with the BrowserID of the particular browser; and
 - (b) for a URL so identified, locating in the content recorded in the database of subordinate requests received at the server arrangement prior to the next primary request a URL matching the identified URL, and upon a match, replacing the identified URL in the content of the primary response with

a database pointer directed to the content recorded in the database for the subordinate response corresponding to such subordinate request having the matching URL; and

- (III) sending the created content of the response to a reviewing browser for generation of the page.

80. The method of claim 79, further comprising originating a digital signature at the reviewing browser for the page viewed.

81. The method of claim 80, wherein the digital signature is originated using a private key of a public-private key pair of a user of the reviewing browser.

82. A method of rendering assistance by a customer service representative (CSR) to a user of a particular browser interacting with a web server arrangement, comprising the steps of,

- (I) monitoring browser interactions of a plurality of browsers, including the particular browser, with the server arrangement, including,
 - (a) capturing information regarding primary and subordinate http requests received from the browsers at the server arrangement and corresponding primary and subordinate http responses sent to the browsers from the server arrangement, the information including,
 - (i) for each request,
 - (A) content of the request,
 - (B) a time of receipt for the request, and
 - (C) a browser identification (BrowserID) associated with the request, the BrowserID being unique to each browser, and
 - (ii) content of the response corresponding to each such request, and
 - (b) identifying sessions for each BrowserID, each session comprising requests associated with such BrowserID that are received at the server arrangement within a predetermined period of time and corresponding responses;
 - (c) assigning a session identification (SessionID) for each identified session; and
 - (d) recording in a database for each identified session the SessionID for such session in association with,
 - (i) the content of each respective request in the identified session,
 - (ii) the content of each respective response in the identified session,
 - (iii) a chronological order of the requests in the identified session, and
 - (iv) the BrowserID for which the session is identified;

(II) viewing by the CSR on a CSR browser a page representative of past browser interactions of the particular browser of the user with the server arrangement, comprising the steps of:

(a) creating content of a response, including,

(i) parsing the content of a primary response recorded in the database to identify uniform resource locators (URLs) contained therein, the primary response being associated with the BrowserID of the particular browser; and

(ii) for a URL so identified, locating in the content recorded in the database of subordinate requests received at the server arrangement prior to the next primary request a URL matching the identified URL, and upon a match, replacing the identified URL in the content of the primary response with a database pointer directed to the content recorded in the database for the subordinate response corresponding to such subordinate request having the matching URL; and

(b) displaying the page on the CSR browser upon receipt by the CSR browser of a response having the created content; and

(III) providing guidance by the CSR to the user based on the viewing of the page by the CSR.

83. The method of claim 82, wherein the guidance is provided by the CSR in near real time.

84. The method of claim 82, wherein the guidance is provided by the CSR offline.

85. The method of claim 82, wherein the guidance is provided by the CSR via telephone.

86. The method of claim 82, wherein the guidance is provided by the CSR via email.

87. The method of claim 82, wherein guidance is provided by the CSR via Internet chat.

88. The method of claim 79, further comprising the steps of,

(a) obtaining a user identification (UserID) associated with a particular request, and

(b) recording the UserID in the database in association with the SessionID of the particular request.

89. The method of claim 88, wherein the UserID is obtained from an application server.

90. The method of claim 79, further comprising the steps of,

- (a) obtaining an application session identification (ApplicationSessionID) associated with a particular request, and
- (b) recording the ApplicationSessionID in the database in association with the SessionID of the particular request.

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91. The method of claim 90, wherein the ApplicationSessionID is obtained from an application server.

92. The method of claim 79, further comprising, before said step of identifying sessions, first discarding,

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- (a) responses, each of which has a content type matching a predetermined content type, and
- (b) each request corresponding to such response.

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93. The method of claim 79, further comprising, for each request for a resource predetermined to have sensitive input fields, first deleting data from such input fields before said step of recording the content of the request.

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94. The method of claim 79; wherein the database includes contents of previous responses recorded in association with respective hash values therefor, and further comprising the steps of,

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- (a) calculating a hash value for the content of a current response; and
- (b) when the calculated hash value matches none of the recorded hash values, recording the content of the current response in the database and, in association therewith, recording the calculated hash value in the database.

95. A computer network for performing said step of monitoring of claim 79, comprising:

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- (a) a server arrangement disposed for communication with a browser whereat said step of capturing is performed;
- (b) a database whereat said step of recording is performed; and
- (c) a firewall disposed between said server arrangement and said database.

96. The computer network of claim 95, wherein said server arrangement comprises a single server.

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97. The computer network of claim 95, wherein said server arrangement comprises a plurality of servers.

98. The computer network of claim 97, wherein said step of capturing information is performed at each server of said plurality of servers.

99. The computer network of claim 98, wherein said computer network further comprises a collection component.

100. The computer network of claim 99, wherein the method further comprises the steps of, at each server of said plurality of servers,

- (a) calculating a hash value for a response captured at that server;
- (b) when the calculated hash value matches one of the reference hash values, forwarding from that server to said collection component the calculated hash value but not the content of the response; and
- (c) when the calculated hash value matches none of the reference hash values, forwarding from that server to said collection component the calculated hash value for the content of the response and the content of the response.

101. The computer network of claim 99, wherein said step of identifying sessions is performed at said collection component.

102. The computer network of claim 99, further comprising a firewall disposed between said server arrangement and said collection component.

103. The method of claim 79, wherein the page further represents past browser interactions of the particular browser in a particular session, and the primary response for which the content is parsed is associated with the SessionID of the particular session.

104. The method of claim 79, wherein the web server arrangement services web sites of a plurality of entities and wherein the database further includes recorded therein, in association with each request, an entity identification (EntityID) unique to each entity.

105. The method of claim 104, wherein the page further represents past browser interactions of the particular browser with regard to a particular entity, and the primary response for which the content is parsed is associated with the EntityID of the particular entity.

106. The method of claim 79, wherein the database further includes recorded therein, in association with each request, an application session identification (ApplicationSessionID) for an application session, each ApplicationSessionID being unique to an application session.

107. The method of claim 106, wherein the page further represents past browser interactions of the particular browser in a particular application session, and the primary response for which the content is parsed is associated with the ApplicationSessionID of the particular application session.

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108. The method of claim 79, wherein the database further includes recorded therein, in association with each request, a user identification (UserID) for a user of the particular browser, each UserID being unique to a user.

10 109. The method of claim 108, wherein the page further represents past browser interactions of the particular browser by a particular user, and the primary response for which the content is parsed is associated with the UserID of the particular user.

15 110. The method of claim 79, further comprising the step of modifying the content of the parsed primary response to deactivate hypertext that would otherwise be included in the page.

20 111. The method of claim 110, further comprising the step of identifying a form source URL in the content of the parsed primary response and a matching target source URL in the content of a subsequent request recorded in the database, and associating the response content with the request content.

25 112. The method of claim 79, further comprising the step of identifying a form source URL in the content of the parsed primary response and a matching target source URL in the content of a subsequent request recorded in the database, and modifying the content of the response to include data from the content of the request such that the page generated by the browser comprises a form-filled page.

30 113. The method of claim 112, wherein the page comprises a complete form-filled page.

114. The method of claim 79, wherein the parsed primary response includes a content type of text/html.

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115. A method for monitoring a browser's interactions with a server arrangement, comprising the steps of:

- (a) capturing information regarding primary and subordinate http requests received at the server arrangement and corresponding primary and subordinate http responses sent from the server arrangement, the information including,
 - (i) for each request, content of the request, and
 - (ii) content of the response corresponding to each such request;
- (b) recording in a database,
 - (i) the content of each respective request,
 - (ii) the content of each respective response, and
 - (iii) a chronological order of the requests;
- (c) parsing the content of primary requests recorded in the database to identify uniform resource locators (URLs) contained therein; and
- (d) taking a predefined action in response to the recognition of a predetermined pattern of identified URLs contained with the content of the primary requests.

116. A method for monitoring a browser's interactions with a server arrangement, comprising the steps of:

- (a) capturing information regarding primary and subordinate http requests received at the server arrangement and corresponding primary and subordinate http responses sent from the server arrangement, the information including,
 - (i) for each request, content of the request and a time of receipt for the request, and
 - (ii) content of the response corresponding to each such request; and
- (b) identifying sessions, each comprising requests received at the server arrangement and corresponding responses;
- (c) assigning a session identification (SessionID) for each identified session;
- (d) recording in a database for each identified session the SessionID for such session in association with,
 - (i) the content of each respective request in the identified session,
 - (ii) the content of each respective response in the identified session, and
 - (iii) a chronological order of the requests in the identified session; and
- (e) for a particular SessionID, parsing the content of primary requests recorded in the database in association with such SessionID to identify uniform resource locators (URLs) contained therein, and
- (f) taking a predefined action in response to the recognition of a predetermined pattern of identified URLs contained with the content of the primary requests.

117. A method for monitoring a browser's interactions with a server arrangement, comprising the steps of:

- (a) capturing information regarding primary and subordinate http requests received at the server arrangement and corresponding primary and subordinate http responses sent from the server arrangement, the information including,
- (i) for each request,
- (A) content of the request,
- (B) a time of receipt for the request, and
- (C) a browser identification (BrowserID) associated with the request, and
- (ii) content of the response corresponding to each such request;
- (b) identifying sessions for each BrowserID, each comprising requests associated with such BrowserID that are received at the server arrangement within a predetermined period of time and corresponding responses;
- (c) assigning a session identification (SessionID) for each identified session;
- (d) recording in a database for each identified session the SessionID for such session in association with,
- (i) the content of each respective request in the identified session,
- (ii) the content of each respective response in the identified session,
- (iii) a chronological order of the requests in the identified session, and
- (iv) the BrowserID for which the session is identified;
- (e) for a particular BrowserID, parsing the content of primary requests recorded in the database in association with such BrowserID to identify uniform resource locators (URLs) contained therein; and
- (f) taking a predefined action in response to the recognition of a predetermined pattern of identified URLs contained with the content of the primary requests.

118. The method of claim 116, wherein the predefined pattern comprises a chronological sequence of URLs.

119. The method of claim 116, wherein the predetermined action comprises notifying a customer service representative of the recognition of the predetermined pattern.

120. The method of claim 116, wherein the predetermined action comprises assigning a pattern identification (PatternID) corresponding to the URL pattern recognized and recording the PatternID in the database.

121. A computer network for performing the method of claim 116, comprising:

- (a) a server arrangement disposed for communication with a browser whereat said step of capturing is performed; and
- (b) a database whereat said step of recording is performed.

122. The computer network of claim 121, further comprising a firewall in said computer network disposed between said server arrangement and said database.

5 123. The computer network of claim 122, wherein said server arrangement comprises a single server.

124. The computer network of claim 122, wherein said server arrangement comprises a plurality of servers.

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125. The computer network of claim 124, wherein said step of capturing information is performed at each server of said plurality of servers.

126. The computer network of claim 125, wherein said computer network further comprises a collection component whereat said step of identifying sessions is performed.

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127. The computer network of claim 126, further comprising a firewall disposed between said server arrangement and said collection component.

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128. Computer-readable medium having computer-executable instructions that perform the steps of the method of claim 1.

What is claimed is:

1. A method for monitoring a browser's interactions with a server arrangement, comprising the steps of:

(a) capturing information regarding http requests received at the server arrangement and corresponding http responses sent from the server arrangement, the information including,

(i) for each request, content of the request and a time of receipt for the request, and

(ii) content of the response corresponding to each such request;

(b) identifying sessions, each comprising requests received at the server arrangement and corresponding responses;

(c) assigning a session identification (SessionID) for each identified session; and

(d) recording in a database for each identified session the SessionID for such session in association with,

(i) the content of each respective request in the identified session,

(ii) the content of each respective response in the identified session, and

(iii) a chronological order of the requests in the identified session.

2. A method for monitoring browser interactions with a server arrangement, comprising the steps of:

(a) capturing information regarding http requests received from browsers at the server arrangement and corresponding http responses sent to the browsers from the server arrangement, the information including,

(i) for each request,

(A) content of the request,

(B) a time of receipt for the request, and

(C) a browser identification (BrowserID) associated with the request, and

(ii) content of the response corresponding to each such request, and

(b) identifying sessions for each BrowserID, each session comprising requests associated with such BrowserID that are received at the server arrangement within a predetermined period of time and corresponding responses;

(c) assigning a session identification (SessionID) for each identified session; and

(d) recording in a database for each identified session the SessionID for such session in association with,

(i) the content of each respective request in the identified session,

(ii) the content of each respective response in the identified session,

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- (iii) a chronological order of the requests in the identified session, and
- (iv) the BrowserID for which the session is identified.

3. A method for monitoring browser interactions with a server arrangement for a website, comprising the steps of:

- (a) capturing information regarding http requests received from browsers at the server arrangement and corresponding http responses sent to the browsers from the server arrangement, the information including,
 - (i) for each request,
 - (A) content of the request,
 - (B) a time of receipt for the request,
 - (C) a browser identification (BrowserID) associated with the request, and
 - (D) an entity identification (EntityID) associated with a uniform resource locator (URL) related to the request, and
 - (ii) content of the response corresponding to each such request;
- (b) identifying sessions for each pair of BrowserID and EntityID, each session comprising,
 - (i) requests associated with such BrowserID and related to the URL associated with the EntityID that are received at the server arrangement within a predetermined period of time, and
 - (ii) corresponding responses;
- (c) assigning a session identification (SessionID) for each identified session; and
- (d) recording in a database for each identified session the SessionID for such session in association with,
 - (i) the content of each respective request in the identified session,
 - (ii) the content of each respective response in the identified session,
 - (iii) a chronological order of the requests in the identified session, and
 - (iv) the BrowserID and EntityID for which the session is identified.

4. The method of claims 1, ~~2~~, or ~~3~~, wherein said step of recording in the database for each identified session the chronological order of the requests in the identified session comprises recording in the database the time of receipt for each request in the identified session.

5. The method of claims 1, ~~2~~, or ~~3~~, wherein said step of identifying sessions includes identifying,

(a) requests, each of which is received at the server arrangement within a predetermined period of time of another such request, and

(b) responses corresponding to such requests.

6. The method of claim 5, wherein said step of identifying sessions further includes identifying a request as being chronologically the last request of the session if the request is for a resource predetermined to signify an end of a session.

7. The method of claims 1, ~~2~~, or ~~3~~, further comprising the steps of,

(a) obtaining a user identification (UserID) associated with a particular request, and

(b) recording the UserID in the database in association with the SessionID of the particular request.

8. The method of claim 7, wherein the UserID is obtained from an application server.

9. The method of claims 1, ~~2~~, or ~~3~~, further comprising the steps of,

(a) obtaining an application session identification (ApplicationSessionID) associated with a particular request, and

(b) recording the ApplicationSessionID in the database in association with the SessionID of the particular request.

10. The method of claim 9, wherein the ApplicationSessionID is obtained from an application server.

11. The method of claims 1, ~~2~~, or ~~3~~, further comprising, before said step of identifying sessions, first discarding,

(a) responses, each of which has a content type matching a predetermined content type, and

(b) each request corresponding to such response.

12. The method of claims 1, ~~2~~, or ~~3~~, further comprising, for each request for a resource predetermined to have sensitive input fields, first deleting data from such input fields before said step of recording the content of the request.

13. The method of claims ~~1, 2, or 3~~, wherein the database includes contents of previous responses recorded in association with respective hash values therefor, and further comprising the steps of,

- (a) calculating a hash value for the content of a current response; and
- (b) when the calculated hash value matches none of the recorded hash values, recording the content of the current response in the database and, in association therewith, recording the calculated hash value in the database.

14. The method of claim 13, wherein said step of recording the SessionID for each identified session in association with the content of each respective response in the identified session comprises the step of linking the SessionID with the recorded hash value for the content of each response in such identified session.

15. A computer network for performing the method of claims ~~1, 2, or 3~~, comprising:

- (a) a server arrangement disposed for communication with a browser whereat said step of capturing is performed; and
- (b) a database whereat said step of recording is performed.

16. The computer network of claim 15, further comprising a firewall in said computer network disposed between said server arrangement and said database.

17. The computer network of claim 15, wherein said server arrangement comprises a single server.

18. The computer network of claim 15, wherein said server arrangement comprises a plurality of servers.

19. The computer network of claim 18, wherein said step of capturing information is performed at each server of said plurality of servers.

20. The computer network of claim 19, wherein said computer network further comprises a collection component.

21. The computer network of claim 20, wherein the method further comprises the steps of, at each server of said plurality of servers,

- (a) calculating a hash value for a response captured at that server;

- (b) when the calculated hash value matches one of the reference hash values, forwarding from that server to said collection component the calculated hash value but not the content of the response; and
- (c) when the calculated hash value matches none of the reference hash values, forwarding from that server to said collection component the calculated hash value for the content of the response and the content of the response.

22. The computer network of claim 20, wherein said step of identifying sessions is performed at said collection component.

23. The computer network of claim 20, further comprising a firewall disposed between said server arrangement and said collection component.

24. The method of claims 1, 2, or 3, further comprising the steps of,

- (a) identifying each request for which a corresponding response is of a content type representing part of a click stream, and
- (b) recording in the database whether a recorded request is so identified.

25. The computer network of claim 24, wherein said step of identifying each request for which a corresponding response is of a content type representing part of a click stream is performed at the server arrangement.

26. The computer network of claim 24, wherein the content type is text/html.

27. The computer network of claim 24, wherein said step of recording in the database whether a response recorded in the database is so identified comprises setting a flag maintained in the database in association with the request.

28. The method of claims 1, 2, or 3, wherein the content of each response is retained within a respective record of the database, and wherein said step of recording further comprises calculating a hash value for each such database record and then encrypting the calculated hash value with a private key of a public-private key pair.

29. The method of claim 28, wherein the public-private key pair is for an entity.

30. The method of claim 29, wherein the public-private key pair is for a user of a browser to which the record pertains.

31. The method of claims 1, ~~2, or 3~~, wherein the content of each request is retained within a
respective record of the database, and wherein said step of recording further comprises
calculating a hash value for each such database record and then encrypting the
calculated hash value with a private key of a public-private key pair.

32. The method of claim 31, wherein the public-private key pair is for an entity.

33. The method of claim 31, wherein the public-private key pair is for a user of a browser to
which the record pertains.

34. The method of claims 1, ~~2, or 3~~, wherein each SessionID is retained within a respective
record of the database, and wherein said step of recording further comprises calculating a
hash value for each such database record and then encrypting the calculated hash value
with a private key of a public-private key pair.

35. The method of claim 34, wherein the public-private key pair is for an entity.

36. The method of claim 34, wherein the public-private key pair is for a user of a browser to
which the record pertains.

37. The method of claims 2, ~~or 3~~, wherein each BrowserID is retained within a respective
record of the database, and wherein said step of recording further comprises calculating a
hash value for each such database record and then encrypting the calculated hash value
with a private key of a public-private key pair.

38. The method of claim 37, wherein the public-private key pair is for an entity.

39. The method of claim 37, wherein the public-private key pair is for a user of a browser to
which the record pertains.

40. The method of claim 3, wherein each EntityID is retained within a respective record of
the database, and wherein said step of recording further comprises calculating a hash
value for each such database record and then encrypting the calculated hash value with a
private key of a public-private key pair.

41. The method of claim 40, wherein the public-private key pair is for an entity.

42. The method of claim 40, wherein the public-private key pair is for a user of a browser to
which the record pertains.

43. A method of creating content of a response enabling a browser to generate a page from information recorded in a database regarding past browser interactions with a server arrangement, the browser interactions comprising primary and subordinate http requests received at the server arrangement and corresponding primary and subordinate http responses sent from the server arrangement, the information including,

- (i) for each request, content of the request and, in association therewith, content of the response corresponding to such request, and
- (ii) a chronological order of the requests received at the server arrangement,

the method comprising the steps of:

- (a) parsing the content of a primary response recorded in the database to identify uniform resource locators (URLs) contained therein, and
- (b) for a URL so identified, locating in the content recorded in the database of subordinate requests received at the server arrangement prior to the next primary request a URL matching the identified URL, and upon a match, replacing the identified URL in the content of the primary response with a database pointer directed to the content recorded in the database for the subordinate response corresponding to such subordinate request having the matching URL.

44. A method of creating content of a response enabling a browser to generate a page from information recorded in a database regarding past browser interactions with a server arrangement, the browser interactions comprising primary and subordinate http requests received at the server arrangement from browsers and corresponding primary and subordinate http responses sent from the server arrangement to the browsers, the page representative of past browser interactions of a particular browser, the information recorded in the database including,

- (i) for each request, content of the request and, in association therewith, content of the response corresponding to such request and a browser identification (BrowserID) for the request, the BrowserID being unique to a browser,
- (ii) a chronological order of the requests received at the server arrangement,

the method comprising the steps of:

- (a) parsing the content of a primary response recorded in the database to identify uniform resource locators (URLs) contained therein, the primary response being associated with the BrowserID of the particular browser;
- (b) for a URL so identified, locating in the content recorded in the database of subordinate requests received at the server arrangement prior to the next primary request a URL matching the identified URL, and upon a match, replacing the identified URL in the content of the primary response with a

database pointer directed to the content recorded in the database for the subordinate response corresponding to such subordinate request having the matching URL.

45. The method of claim 44, wherein the database further includes recorded therein, in association with each request, a session identification (SessionID) for a session in which the request was received at the server arrangement, each SessionID being unique to a session.

46. The method of claim 45, wherein the page further represents past browser interactions of the particular browser in a particular session, and the primary response for which the content is parsed is associated with the SessionID of the particular session.

47. The method of claim 44, wherein the database further includes recorded therein, in association with each request, an entity identification (EntityID) on whose behalf the corresponding response is made, each EntityID being unique to an entity.

48. The method of claim 47, wherein the page further represents past browser interactions of the particular browser with regard to a particular entity, and the primary response for which the content is parsed is associated with the EntityID of the particular entity.

49. The method of claim 44, wherein the database further includes recorded therein, in association with each request, an application session identification (ApplicationSessionID) for an application session, each ApplicationSessionID being unique to an application session.

50. The method of claim 49, wherein the page further represents past browser interactions of the particular browser in a particular application session, and the primary response for which the content is parsed is associated with the ApplicationSessionID of the particular application session.

51. The method of claim 44, wherein the database further includes recorded therein, in association with each request, a user identification (UserID) for a user of the particular browser, each UserID being unique to a user.

52. The method of claim 51, wherein the page further represents past browser interactions of the particular browser by a particular user, and the primary response for which the content is parsed is associated with the UserID of the particular user.

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53. The method of claims 43-~~er~~44, further comprising the step of modifying the content of the parsed primary response to deactivate hypertext that would otherwise be included in the page.

54. The method of claims 43-~~er~~44, further comprising the step of identifying a form source URL in the content of the parsed primary response and a matching target source URL in the content of a subsequent request recorded in the database, and associating the response content with the request content.

55. The method of claims 43-~~er~~44, further comprising the step of identifying a form source URL in the content of the parsed primary response and a matching target source URL in the content of a subsequent request recorded in the database, and modifying the content of the response to include data from the content of the request such that the page generated by the browser comprises a form-filled page.

56. The method of claim 55, wherein the page comprises a complete form-filled page.

57. The method of claims 43-~~er~~44, wherein the parsed primary response includes a content type of text/html.

58. The method of claims 43-~~er~~44, wherein the content of each response is retained within a respective record of the database together with a digital signature for such record, and further comprising the step of verifying the record with a public key of a public-private key pair.

59. The method of claim 58, wherein the public-private key pair is for an entity.

60. The method of claim 58, wherein the public-private key pair is for a user of a browser to which the record pertains.

61. The method of claims 43-~~er~~44, wherein the content of each request is retained within a respective record of the database together with a digital signature for such record, and further comprising the step of verifying the record with a public key of a public-private key pair.

62. The method of claim 61, wherein the public-private key pair is for an entity.

63. The method of claim 61, wherein the public-private key pair is for a user of a browser to which the record pertains.

64. The method of claim 44, wherein each BrowserID is retained within a respective record of the database together with a digital signature for such record, and further comprising the step of verifying the record with a public key of a public-private key pair.

65. The method of claim 64, wherein the public-private key pair is for an entity.

66. The method of claim 64, wherein the public-private key pair is for a user of a browser to which the record pertains.

67. The method of claim 45, wherein each SessionID is retained within a respective record of the database together with a digital signature for such record, and further comprising the step of verifying the record with a public key of a public-private key pair.

68. The method of claim 67, wherein the public-private key pair is for an entity.

69. The method of claim 67, wherein the public-private key pair is for a user of a browser to which the record pertains.

70. The method of claim 47, wherein each EntityID is retained within a respective record of the database together with a digital signature for such record, and further comprising the step of verifying the record with a public key of a public-private key pair.

71. The method of claim 70, wherein the public-private key pair is for the entity of the EntityID.

72. The method of claim 70, wherein the public-private key pair is for a user of a browser to which the record pertains.

73. The method of claim 49, wherein each ApplicationSessionID is retained within a respective record of the database together with a digital signature for such record, and further comprising the step of verifying the record with a public key of a public-private key pair.

74. The method of claim 73, wherein the public-private key pair is for an entity.

75. The method of claim 73, wherein the public-private key pair is for a user of a browser to which the record pertains.

76. The method of claim 49, wherein each UserID is retained within a respective record of the database together with a digital signature for such record, and further comprising the step of verifying the record with a public key of a public-private key pair.

77. The method of claim 76, wherein the public-private key pair is for an entity.

78. The method of claim 76, wherein the public-private key pair is for the user of the UserID.

79. A method of viewing a page representative of past browser interactions of a particular browser with a server arrangement, comprising the steps of:

(I) monitoring browser interactions of a plurality of browsers, including the particular browser, with the server arrangement, including,

(a) capturing information regarding primary and subordinate http requests received from the browsers at the server arrangement and corresponding primary and subordinate http responses sent to the browsers from the server arrangement, the information including,

(i) for each request,

(A) content of the request,

(B) a time of receipt for the request, and

(C) a browser identification (BrowserID) associated with the request, the BrowserID being unique to each browser, and

(ii) content of the response corresponding to each such request, and

(b) identifying sessions for each BrowserID, each session comprising requests associated with such BrowserID that are received at the server arrangement within a predetermined period of time and corresponding responses;

(c) assigning a session identification (SessionID) for each identified session; and

(d) recording in a database for each identified session the SessionID for such session in association with,

(i) the content of each respective request in the identified session,

(ii) the content of each respective response in the identified session,

(iii) a chronological order of the requests in the identified session, and

(iv) the BrowserID for which the session is identified;

(II) creating content of a response, including,

(a) parsing the content of a primary response recorded in the database to identify uniform resource locators (URLs) contained therein, the primary response being associated with the BrowserID of the particular browser; and

- (b) for a URL so identified, locating in the content recorded in the database of subordinate requests received at the server arrangement prior to the next primary request a URL matching the identified URL, and upon a match, replacing the identified URL in the content of the primary response with a database pointer directed to the content recorded in the database for the subordinate response corresponding to such subordinate request having the matching URL; and
- (III) sending the created content of the response to a reviewing browser for generation of the page.

80. The method of claim 79, further comprising originating a digital signature at the reviewing browser for the page viewed.

81. The method of claim 80, wherein the digital signature is originated using a private key of a public-private key pair of a user of the reviewing browser.

82. A method of rendering assistance by a customer service representative (CSR) to a user of a particular browser interacting with a web server arrangement, comprising the steps of,

(I) monitoring browser interactions of a plurality of browsers, including the particular browser, with the server arrangement, including,

(a) capturing information regarding primary and subordinate http requests received from the browsers at the server arrangement and corresponding primary and subordinate http responses sent to the browsers from the server arrangement, the information including,

(i) for each request,

(A) content of the request,

(B) a time of receipt for the request, and

(C) a browser identification (BrowserID) associated with the request, the BrowserID being unique to each browser, and

(ii) content of the response corresponding to each such request, and

(b) identifying sessions for each BrowserID, each session comprising requests associated with such BrowserID that are received at the server arrangement within a predetermined period of time and corresponding responses;

(c) assigning a session identification (SessionID) for each identified session; and

(d) recording in a database for each identified session the SessionID for such session in association with,

(i) the content of each respective request in the identified session,

- (ii) the content of each respective response in the identified session,
(iii) a chronological order of the requests in the identified session, and
(iv) the BrowserID for which the session is identified;
- (II) viewing by the CSR on a CSR browser a page representative of past browser interactions of the particular browser of the user with the server arrangement, comprising the steps of:
- (a) creating content of a response, including,
- (i) parsing the content of a primary response recorded in the database to identify uniform resource locators (URLs) contained therein, the primary response being associated with the BrowserID of the particular browser; and
- (ii) for a URL so identified, locating in the content recorded in the database of subordinate requests received at the server arrangement prior to the next primary request a URL matching the identified URL, and upon a match, replacing the identified URL in the content of the primary response with a database pointer directed to the content recorded in the database for the subordinate response corresponding to such subordinate request having the matching URL; and
- (b) displaying the page on the CSR browser upon receipt by the CSR browser of a response having the created content; and
- (III) providing guidance by the CSR to the user based on the viewing of the page by the CSR.

83. The method of claim 82, wherein the guidance is provided by the CSR in near real time.

84. The method of claim 82, wherein the guidance is provided by the CSR offline.

85. The method of claim 82, wherein the guidance is provided by the CSR via telephone.

86. The method of claim 82, wherein the guidance is provided by the CSR via email.

87. The method of claim 82, wherein guidance is provided by the CSR via Internet chat.

88. The method of claims 79-82, further comprising the steps of,

- (a) obtaining a user identification (UserID) associated with a particular request, and
(b) recording the UserID in the database in association with the SessionID of the particular request.

89. The method of claim 88, wherein the UserID is obtained from an application server.
90. The method of claims 79-~~81~~-82, further comprising the steps of,
(a) obtaining an application session identification (ApplicationSessionID) associated with a particular request, and
(b) recording the ApplicationSessionID in the database in association with the SessionID of the particular request.
91. The method of claim 90, wherein the ApplicationSessionID is obtained from an application server.
92. The method of claims 79-~~81~~-82, further comprising, before said step of identifying sessions, first discarding,
(a) responses, each of which has a content type matching a predetermined content type, and
(b) each request corresponding to such response.
93. The method of claims 79-~~81~~-82, further comprising, for each request for a resource predetermined to have sensitive input fields, first deleting data from such input fields before said step of recording the content of the request.
94. The method of claims 79-~~81~~-82, wherein the database includes contents of previous responses recorded in association with respective hash values therefor, and further comprising the steps of,
(a) calculating a hash value for the content of a current response; and
(b) when the calculated hash value matches none of the recorded hash values, recording the content of the current response in the database and, in association therewith, recording the calculated hash value in the database.
95. A computer network for performing said step of monitoring of claims 79-~~81~~-82, comprising:
(a) a server arrangement disposed for communication with a browser whereat said step of capturing is performed;
(b) a database whereat said step of recording is performed; and
(c) a firewall disposed between said server arrangement and said database.
96. The computer network of claim 95, wherein said server arrangement comprises a single server.

97. The computer network of claim 95, wherein said server arrangement comprises a plurality of servers.

98. The computer network of claim 97, wherein said step of capturing information is performed at each server of said plurality of servers.

99. The computer network of claim 98, wherein said computer network further comprises a collection component.

100. The computer network of claim 99, wherein the method further comprises the steps of, at each server of said plurality of servers,

- (a) calculating a hash value for a response captured at that server;
- (b) when the calculated hash value matches one of the reference hash values, forwarding from that server to said collection component the calculated hash value but not the content of the response; and
- (c) when the calculated hash value matches none of the reference hash values, forwarding from that server to said collection component the calculated hash value for the content of the response and the content of the response.

101. The computer network of claim 99, wherein said step of identifying sessions is performed at said collection component.

102. The computer network of claim 99, further comprising a firewall disposed between said server arrangement and said collection component.

103. The method of claims 79-82, wherein the page further represents past browser interactions of the particular browser in a particular session, and the primary response for which the content is parsed is associated with the SessionID of the particular session.

104. The method of claims 79-82, wherein the web server arrangement services web sites of a plurality of entities and wherein the database further includes recorded therein, in association with each request, an entity identification (EntityID) unique to each entity.

105. The method of claim 104, wherein the page further represents past browser interactions of the particular browser with regard to a particular entity, and the primary response for which the content is parsed is associated with the EntityID of the particular entity.

106. The method of claims 79-82, wherein the database further includes recorded therein, in association with each request, an application session identification

(ApplicationSessionID) for an application session, each ApplicationSessionID being unique to an application session.

107. The method of claim 106, wherein the page further represents past browser interactions of the particular browser in a particular application session, and the primary response for which the content is parsed is associated with the ApplicationSessionID of the particular application session.

108. The method of claims 79-82, wherein the database further includes recorded therein, in association with each request, a user identification (UserID) for a user of the particular browser, each UserID being unique to a user.

109. The method of claim 108, wherein the page further represents past browser interactions of the particular browser by a particular user, and the primary response for which the content is parsed is associated with the UserID of the particular user.

110. The method of claims 79-82, further comprising the step of modifying the content of the parsed primary response to deactivate hypertext that would otherwise be included in the page.

111. The method of claim 110, further comprising the step of identifying a form source URL in the content of the parsed primary response and a matching target source URL in the content of a subsequent request recorded in the database, and associating the response content with the request content.

112. The method of claims 79-82, further comprising the step of identifying a form source URL in the content of the parsed primary response and a matching target source URL in the content of a subsequent request recorded in the database, and modifying the content of the response to include data from the content of the request such that the page generated by the browser comprises a form-filled page.

113. The method of claim 112, wherein the page comprises a complete form-filled page.

114. The method of claims 79-82, wherein the parsed primary response includes a content type of text/html.

115. A method for monitoring a browser's interactions with a server arrangement, comprising the steps of:

- (a) capturing information regarding primary and subordinate http requests received at the server arrangement and corresponding primary and subordinate http responses sent from the server arrangement, the information including,
 - (i) for each request, content of the request, and
 - (ii) content of the response corresponding to each such request;
- (b) recording in a database,
 - (i) the content of each respective request,
 - (ii) the content of each respective response, and
 - (iii) a chronological order of the requests;
- (c) parsing the content of primary requests recorded in the database to identify uniform resource locators (URLs) contained therein; and
- (d) taking a predefined action in response to the recognition of a predetermined pattern of identified URLs contained with the content of the primary requests.

116. A method for monitoring a browser's interactions with a server arrangement, comprising the steps of:

- (a) capturing information regarding primary and subordinate http requests received at the server arrangement and corresponding primary and subordinate http responses sent from the server arrangement, the information including,
 - (i) for each request, content of the request and a time of receipt for the request, and
 - (ii) content of the response corresponding to each such request; and
- (b) identifying sessions, each comprising requests received at the server arrangement and corresponding responses;
- (c) assigning a session identification (SessionID) for each identified session;
- (d) recording in a database for each identified session the SessionID for such session in association with,
 - (i) the content of each respective request in the identified session,
 - (ii) the content of each respective response in the identified session, and
 - (iii) a chronological order of the requests in the identified session; and
- (e) for a particular SessionID, parsing the content of primary requests recorded in the database in association with such SessionID to identify uniform resource locators (URLs) contained therein, and
- (f) taking a predefined action in response to the recognition of a predetermined pattern of identified URLs contained with the content of the primary requests.

117. A method for monitoring a browser's interactions with a server arrangement, comprising the steps of:

- (a) capturing information regarding primary and subordinate http requests received at the server arrangement and corresponding primary and subordinate http responses sent from the server arrangement, the information including,
 - (i) for each request,
 - (A) content of the request,
 - (B) a time of receipt for the request, and
 - (C) a browser identification (BrowserID) associated with the request, and
 - (ii) content of the response corresponding to each such request;
- (b) identifying sessions for each BrowserID, each comprising requests associated with such BrowserID that are received at the server arrangement within a predetermined period of time and corresponding responses;
- (c) assigning a session identification (SessionID) for each identified session;
- (d) recording in a database for each identified session the SessionID for such session in association with,
 - (i) the content of each respective request in the identified session,
 - (ii) the content of each respective response in the identified session,
 - (iii) a chronological order of the requests in the identified session, and
 - (iv) the BrowserID for which the session is identified;
- (e) for a particular BrowserID, parsing the content of primary requests recorded in the database in association with such BrowserID to identify uniform resource locators (URLs) contained therein; and
- (f) taking a predefined action in response to the recognition of a predetermined pattern of identified URLs contained with the content of the primary requests.

118. The method of claims ~~115, 116, or 117~~, wherein the predefined pattern comprises a chronological sequence of URLs.

119. The method of claims ~~115, 116, or 117~~, wherein the predetermined action comprises notifying a customer service representative of the recognition of the predetermined pattern.

120. The method of claims ~~115, 116, or 117~~, wherein the predetermined action comprises assigning a pattern identification (PatternID) corresponding to the URL pattern recognized and recording the PatternID in the database.

121. A computer network for performing the method of claims ~~115, 116, or 117~~, comprising:

- (a) a server arrangement disposed for communication with a browser whereat said step of capturing is performed; and
- (b) a database whereat said step of recording is performed.

5 122. The computer network of claim 121, further comprising a firewall in said computer network disposed between said server arrangement and said database.

123. The computer network of claim 122, wherein said server arrangement comprises a single server.

10 124. The computer network of claim 122, wherein said server arrangement comprises a plurality of servers.

125. The computer network of claim 124, wherein said step of capturing information is performed at each server of said plurality of servers.

15 126. The computer network of claim 125, wherein said computer network further comprises a collection component whereat said step of identifying sessions is performed.

20 127. The computer network of claim 126, further comprising a firewall disposed between said server arrangement and said collection component.

128. Computer-readable medium having computer-executable instructions that perform the steps of the method of claims 1, 2, 3, 43, 44, 70, 115, 116, or 117.

SCANNED, # 1